

## SECTION 5: DIVERSE LEARNERS

### SUPPORTS FOR MULTILINGUAL AND ENGLISH LEARNERS



OSSE views multilingualism as an asset and values that we are a multilingual and multicultural city, with more than 125 languages spoken across the District. Literacy for English learners is framed within a vision for success in which all the District's English learners will have equitable, meaningful access to high-quality academic and linguistic programs in an inclusive, welcoming environment. To put this vision into action, literacy instruction must be responsive to English learners, enabling them to grow their proficiency in listening, reading, speaking and writing in English, as framed by [OSSE's foundational principles for serving English learners](#), the District's [WIDA English Language Development \(ELD\) Standards Framework](#) and Common Core State Standards (CCSS).

Under federal law, LEAs must provide an effective language instruction education program, or EL program, to English learners so they may develop proficiency in English. To compare and contrast EL program types and consider which is most appropriate for your school and students, refer to [EL program overview](#) and [OSSE dual language resources](#). Regardless of the program type selected, it should be implemented in alignment with the WIDA ELD Standards framework and should advance students' language proficiency, literacy and academic achievement.

This chapter provides a framework for standards-based literacy and language development practices for serving English learners in English-based programs and bilingual/dual language programs, outlining common practices as well as unique features of literacy for English learners in these two approaches. It also addresses biliteracy for native English-speaking students in bilingual dual-language programs.

#### VISION FOR SUCCESS: ALL OF THE DISTRICT'S ENGLISH LEARNERS WILL HAVE EQUITABLE, MEANINGFUL ACCESS TO HIGH-QUALITY ACADEMIC AND LINGUISTIC PROGRAMS IN AN INCLUSIVE, WELCOMING ENVIRONMENT.

FOUNDATIONAL PRINCIPLES	CONNECTIONS ACROSS STATE ELA STANDARDS AND WIDA ELD STANDARDS FRAMEWORK
Value the cultural and linguistic backgrounds of all EL students.	<ul style="list-style-type: none"><li>English learners' identities, language and culture are represented as a valued part of the school and literacy instruction.</li></ul>
Partner with families, educators, system leaders and communities to nurture EL students' linguistic, academic, social and emotional development.	<ul style="list-style-type: none"><li>ELA teachers, reading specialists, ELD teachers and other educators across the curriculum use collaborative practices, e.g., co-planning, co-teaching and co-data reviews to support English learners.</li><li>Educators encourage home language literacy and development through two-way family engagement.</li></ul>
Provide EL students access to grade-level academic content and English language instruction that are appropriate for advancing their language proficiency and academic achievement.	<ul style="list-style-type: none"><li>Instruction is driven by content and language objectives based on the WIDA ELD Standards and state ELA standards.</li><li>Instruction provides rich opportunities for students to speak, listen, read and write purposefully about academic content.</li><li>Integrated content and language instruction advanced English learners' proficiency in English and academic knowledge.</li></ul>
Use multiple sources of data to inform and continually refine EL programs, services, instruction and assessment.	<ul style="list-style-type: none"><li>Educators use the WIDA ELD performance level definitions, rubrics and standards to:<ul style="list-style-type: none"><li>Set annual language development goals;</li><li>Discuss students' goals and progress with them;</li><li>Assess students' progress in listening, reading, speaking, and writing regularly; and</li><li>Use formative and summative data to adjust instruction and scaffolds and set new goals.</li></ul></li></ul>

**WIDA ELD STANDARDS STATEMENTS** conceptual framing of language and content integration

**KEY LANGUAGE USES** prominent language uses across disciplines

**LANGUAGE EXPECTATIONS** goals for content-driven language learning

**PROFICIENCY LEVELS DESCRIPTORS**

a continuum of language development across six levels

The WIDA ELD Standards Framework drills down from the concept of content and language integration to guide planning for intentional instruction that aligns with language uses across content areas. The framework provides language expectations that teachers can use to create objectives for language learning, within descriptors for levels of proficiency in English, to reflect how students' linguistic resources grow as they gain proficiency in the English language.

### Literacy and English Learners in English-based English as a Second Language Programs

#### What is Different About Developing Literacy Skills for English Learners?

In contrast to many of their native English-speaking peers, English learners expend a lot of energy during instructional and homework time trying to understand what they are reading and figure out how to write their thoughts in English. English learners require interactive literacy instruction integrated with WIDA's ELD Standards that emphasizes relevance and comprehension to overcome gaps in meaning and concept knowledge. This view of language is embodied in the five-faceted approach to English learners' literacy success:

#### **VOCABULARY:**

Developing skills  
in word recognition.

#### **CONCEPTS:**

Connecting new words to  
what students do or do not  
already know.

#### **PHONEMIC AWARENESS:**

Recognizing, saying, and writing the  
sounds of the English language.

#### **FLUENCY:**

Decoding, phrasing, and emoting for  
feeling and comprehension.

#### **RELEVANCE:**

Instruction that honors a student's  
identity and interests.

#### **WATCH:**

[Effective English literacy instruction  
for English learners!](#)

## COMMON LITERACY INSTRUCTION PRACTICES ACROSS LANGUAGE PROGRAM TYPES

Regardless of an LEA's English learner program type, there are 10, common literacy instructional practices for ELs:

1.	Exposure to a rigorous curriculum.
2.	Supported literacy learning at home.
3.	Daily structured opportunities to practice academic speaking, listening, reading and writing.
4.	Attention to <a href="#">vocabulary development</a> , phonics and decoding.
5.	Native language supports, such as teaching students how to use tools, e.g., a bilingual (picture) dictionary, and establishing expectations for using the tools.
6.	Planning for maximal engagement by providing <a href="#">culturally responsive instruction</a> that represents students' interests, experiences and backgrounds in a positive light.
7.	<p><a href="#">Reading comprehension strategies such as:</a></p> <ul style="list-style-type: none"> <li><input type="checkbox"/> Partner reading with time to alternate between reading the text and summarizing.</li> <li><input type="checkbox"/> Shared reading (choral reading, reader's theater and echo reading).</li> <li><input type="checkbox"/> <a href="#">Close reading</a>.</li> <li><input type="checkbox"/> Building background knowledge.</li> <li><input type="checkbox"/> Frequent structured interactions with peers to build knowledge of texts.</li> <li><input type="checkbox"/> Opportunities to collaborate with peers on writing assignments and projects.</li> </ul>
8.	<p>Scaffolds to increase access to instructional material and support English learners in demonstrating their learning:</p> <ul style="list-style-type: none"> <li><input type="checkbox"/> Adapted texts that are differentiated to be accessible for readers at different levels.</li> <li><input type="checkbox"/> Graphic organizers such as character webs and timelines.</li> <li><input type="checkbox"/> Realia, visuals and related media to support concept attainment.</li> <li><input type="checkbox"/> Sentence starters, sentence/paragraph/essay frames.</li> </ul>
9.	Frequent checks for understanding.
10.	Opportunities to build <a href="#">cross-language connections</a> .

## LITERACY PRACTICES TO SUPPORT ENGLISH LEARNERS BASED ON DIFFERENT NEEDS

[WIDA's English Language Development Standards Framework](#) recognizes the unique needs of English learners at different grade bands with respect to their developmental level, content area expectations, and English language proficiency level. While each student comes to school at different stages of their English-learning journey and with different strengths and background experiences, there are some general trends, discussed below, that teachers may see in certain grade bands and categories. Beyond age- and grade-level distinctions, English learners' needs for certain English language development supports will vary. Each of the categories below describe English learners' unique needs to meet their literacy goals.

English learners in **secondary** settings may vary greatly in their prior English language development trajectories.

### Related literacy resources:

- [What Works Clearinghouse - Literacy ELs MS Practice Guide](#)
- [Integrating English language development into ELA and Social Studies - secondary](#)

In **elementary** school, English learners are develop complex communication skills in their home language(s) as their academic English usage and comprehension grows.

### Related literacy resources:

- [Interactive read alouds demonstration](#)
- [Collaborative online interactive writing instruction](#)
- [A teaching routine for academic](#)

In **early childhood**, English learners simultaneously learn English and their home language(s).

### Related literacy resources:

- [WIDA's Focus Bulletin on the Early Years and Literacy](#)
- [MTSS for ELs' Implementing Interactive Read Alouds for ELs bilingual lesson planning tool.](#)
- [WIDA's Early Language Development Standards.](#)

- **Newcomer** students are new to the US and may vary in their familiarity with English language reading and writing as well as American culture. Educators should focus on developing language and literacy as well as vocabulary and new concepts. This [Newcomer Toolkit](#) features recommendations for planning high-quality instruction for newcomers.
- **Long-term English learners** are English learners who have been in an English learner program for several years. [Long-Term English Learners: Spotlight on an Overlooked Population identifies instructional practices for LTEs.](#)
- **Students with limited or interrupted formal education (SLIFE)** have not had opportunities to engage in age-appropriate formal education, unlike other English learners. Regardless of whether an SLIFE has significant educational gaps due to interrupted or limited formal education, they typically have low literacy and unfamiliarity with typical school practices. [Focus on SLIFE addresses the unique needs of SLIFE in school settings while Ten Ideas for Teaching S\(L\)IFE showcases practices teachers can use right away.](#)
- **Monitored ELs (ELms)** received a qualifying score on the annual ACCESS for ELLs English language proficiency assessment within the last four years. Teachers continue to monitor their academic progress to ensure they can meet the demands of instruction without the need for additional English language supports (see section 2.4 Monitoring literacy development in English learners). Where concerns arise, school teams may consider a multitiered system of support (MTSS) to uncover and address concerns using a tool such as this [culturally responsive rubric for response to intervention within MTSS.](#)

## MONITORING ENGLISH LEARNERS' LITERACY DEVELOPMENT

Ongoing monitoring of literacy development is important to measure growth, plan for instructional supports and alert educators to a potential reading and/or writing problem. Teachers should design goals for literacy development respective of an English learner's English language proficiency level and share the goals with the student prior to conducting progress assessments. [Formative Assessment for English Learners in Distance Learning](#) shows how to collect data from structured oral interactions and collaborative writing activities. This [sample progress monitoring tool](#) may assist teachers in collecting data on English learners' literacy development.

## HOME-SCHOOL CONNECTIONS

Family involvement in their child's learning is crucial for academic success. Norms around family involvement in schooling can vary by country and region; therefore, educators' efforts to help families make literacy home-school connections should be asset-based, culturally responsive and respectful to families. Families and caregivers, including those with low literacy skills, can use their home language or English to:

- Have a conversation and ask questions about what they hear, read, or do;
- Talk, draw, or write about experiences using new vocabulary; and
- Ensure children have opportunities to practice using new vocabulary and on their own (orally and/or in writing).

[Ready Rosie](#), [Cox Campus](#) and [MTSS for ELs](#) offer multilingual models of home literacy practices.

## LITERACY INSTRUCTION IN DUAL LANGUAGE PROGRAMS

Why is biliteracy instruction important for English learners and emergent bilinguals? Dual language programs give students identified as English learners the support needed for their linguistic development and take affirmative steps to ensure that English learners can meaningfully participate in education programs and services. Speaking to this requirement, the use of two languages as mediums of instruction can be used for any part or all of the curriculum of pre-K through Grade 12 within the dual language program implemented.

Highly effective literacy instruction in dual language programs involves three key leadership tasks:

- Defining the dual language program model
- The content and language allocation plan
- Planning and delivering instruction in two languages

## DEFINING THE DUAL LANGUAGE PROGRAM

Successful biliteracy instruction in dual language programs has a clear definition that guides the decision-making process to ensure that schools' initiatives are aligned with the program goals and support the improvement and sustainability of highly effective instruction for all English learners and emergent bilinguals. Dual language program goals for all students, including English learners, are to:

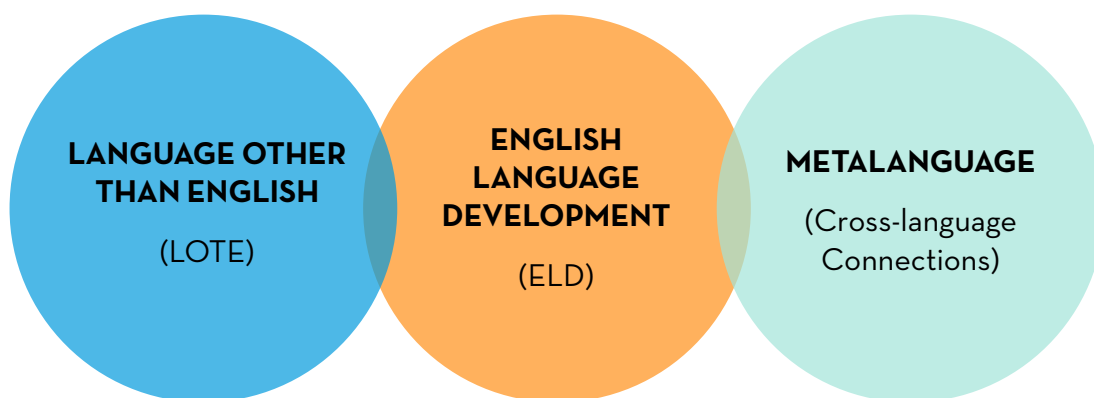
- Become bilingual and biliterate in English and a second language (with the literacy component integrating the development of skills in two languages in the domains of listening, speaking, reading and writing);
- Provide for the educational needs of culturally and linguistically diverse students; and
- Meet academic content standards and benchmarks in all subject areas.

OSSE's office of multilingual education provides technical assistance and support in [defining instructional programs for multilingual education](#). The [DC Dual Language Roadmap](#) provides more details about dual language program models and definitions.

## CONTENT AND LANGUAGE ALLOCATION PLAN

The [content and language allocation plan](#) allows school leaders and educators to identify the content and language of instruction in each grade where bilingual instruction is provided. Additionally, the instructional schedule is evidence that reflects the three moments (see graphic below) of instruction in a dual language context. Without explicit attention to language status and program model fidelity, the benefits of dual language instruction may not be as strong for English learners as for English speakers (Collier & Thomas, 2003).

**Qualities of Instruction to Develop Biliteracy and Language Skills.** Dual language programming entails improving academic achievement for English learners and emergent bilinguals through explicitly planning literacy instruction in the three aspects of biliteracy:



Biliteracy practices are not duplicative and do not involve concurrent translation across languages. There is a dedicated instructional time for each language of instruction where students are acquiring and practicing language and accessing grade-level content. Learning literacy skills in a second language does not interfere with acquiring subject-area knowledge or with maintaining one's first language.

## Content and Language Allocation in a Dual Language Program

AREA OF INSTRUCTION	CHARACTERISTICS	RESOURCES
<b>Authentic instruction in Languages Other Than English (LOTE)</b>	<ul style="list-style-type: none"> <li>Includes the planning of standards-based learning experiences in the partner language (Spanish, Chinese, French, etc.)</li> <li>This instruction should be at least 50% of instructional time</li> <li>The instruction of Language Arts in LOTE is a non-negotiable for effective biliteracy in addition to one or more content areas</li> <li>The use of speaking, listening, reading, and writing in a wide range or purposes in all content areas</li> <li>Educators are in charge to create a literacy rich learning environment to practice social language but also to develop the academic language needed to gain knowledge in a content area</li> </ul>	<ul style="list-style-type: none"> <li><a href="#">WIDA English Language Development Standards, 2020 Edition</a></li> <li><a href="#">Key Language Uses</a></li> <li><a href="#">Planning instruction for emergent bilinguals</a></li> </ul>
<b>English Language Development (ELD)</b>	<ul style="list-style-type: none"> <li>Is standards-based instruction with opportunities to acquire, learn, and practice language in listening, speaking, reading, and writing</li> <li>Must always consider what English learners and emergent bilinguals have learned in LOTE and not reteach concepts that students already know, e.g., directionality; context clues, and letters that make words, words that make sentences, and sentences make paragraphs</li> <li>Must avoid a monolingual view of language and literacy instruction</li> <li>Recognizes the dynamic of using two or more languages in combination for a wide range of purposes</li> </ul>	<ul style="list-style-type: none"> <li><a href="#">WIDA English Language Development Standards, 2020 Edition</a></li> <li><a href="#">WIDA Standards Statements</a></li> <li><a href="#">WIDA Can Do descriptors</a></li> </ul>
<b>Metalanguage</b>	<ul style="list-style-type: none"> <li>Is thinking and talking about language</li> <li>An opportunity to understand the relationships between and within languages</li> <li>Allows students to analyze how language can be leveraged to express meaning (Escamilla, 2015)</li> <li>An instructional time dedicated to acknowledging the influence of the second language and build on the wealth of the linguistic and academic knowledge in each student</li> <li>The purposes of cross-language connections (Bridging), are: (1) to help students transfer academic language learned in one language to the other language, and (2) engage in constructive analysis by focusing on how languages are similar and different (Beaman &amp; Urow, 2013)</li> </ul>	<ul style="list-style-type: none"> <li><a href="#">Cross-language connection strategies</a></li> <li><a href="#">Appendix D. Considerations for Cross-Language Connections</a></li> <li><a href="#">Appendix E. Bilingual Behaviors</a></li> </ul>

### Planning and Delivering Instruction in Two Languages

Planning for biliteracy guides literacy instruction in two languages, including equal attention of instruction dedicated to four domains: oracy (speaking and listening), reading, writing and metalanguage (cross-language connections). “The teaching of these literacy skills is critical for the development of a robust biliteracy program for English learners and emergent bilinguals (Escamilla, 2014, p.62).” Best practices for biliteracy instruction include:

- The design of units of learning to help students in acquiring knowledge and language skills in LOTE, with the intention to reinforce knowledge and skill during the instruction in English;
- The planning for biliteracy including a diverse range of teaching and learning activities that occurs in the three areas of instruction across the curriculum;
- Focusing not only on language of instruction, but also on quality of instruction in each language; and
- Explicit teaching of cross-language connections. (August & Shanahan, 2006; Gersten & Baker, 2000; Thomas & Collier, 2003).

See **Appendix F** for more details about features of planning for biliteracy.

### Educators Delivering Instruction in a Dual Language Program

Literacy learning is enhanced when teachers are reflective and aware of their own strengths and challenges. The most effective way, is to provide opportunities where topics target participants’ specific knowledge, skills and strategies related to second language acquisition and simultaneous literacy instruction in two languages. All teachers of literacy in LOTE require specialized professional development on how to teach that language in the US context. Effective biliteracy educators embrace a holistic multilingual perspective on teaching, learning and assessments that sees two (or more) languages that each student speaks as complementary arts of the student’s developing linguistic repertoire.

LEAs are responsible for providing equal opportunities for English learners and emergent bilinguals to receive standard-based high-quality instruction to develop literacy skills in two languages. Therefore, dual language programs should be developed to have a clear biliteracy trajectory that identifies the language of instruction for each content area in the grades where bilingual instruction is provided. Visit [OSSÉ’s dual language website](#) for more information.



## SPECIAL EDUCATION CONSIDERATIONS FOR LITERACY



### READING DIFFICULTIES IN STUDENTS WITH DISABILITIES

A large majority of students with disabilities encounter reading difficulties based on organic and environmental factors which may affect their ability to adequately achieve grade-level expectations related to phonemic awareness, phonological processing, vocabulary acquisition and comprehension (Carreteiro et al., 2016). Although a student may have been diagnosed with reading difficulties, ongoing student assessment within MTSS is beneficial in developing a student's individual academic program and monitoring growth. Screening, progress monitoring and data-based decision-making are necessary components of MTSS that must be followed in order to inform instruction and implement appropriate interventions.

### SCREENING

Assessing the elements of reading fluency is considered integral in the achievement of reading proficiency for students with reading difficulties. The strong correlation between students' reading fluency and reading comprehension promotes the reasoning for targeted skill instruction in the components of reading fluency (Hudson et al., 2005). The following reading components in Table 2 illustrate the relationship in reading fluency and comprehension:

**Table 2: Correlations Between Reading Fluency and Reading Comprehension**

READING COMPONENTS	EFFECTS ON FLUENCY AND COMPREHENSION
Automaticity and Working Memory	higher order thinking skills are developed when words are instinctively pronounced; working memory capacity to decode is not overloaded
Reading Accuracy and Reading Proficiency	proficient phonological awareness, phonics skill acquisition and sight-word recognition promotes comprehension
Reading Rate and Reading Proficiency	ability to automatically and fluidly read words allows cognitive resources to be available to comprehend text
Prosody and Reading Proficiency	ability to read with appropriate intonation, duration, and pitch promotes comprehension
Assessing Reading Fluency	consistent progress monitoring through observation and probes provides growth information and instructional needs
Assessing Accuracy	conducting running records and determining words errors per 100 words allows the analysis of reading patterns and potential skill building strategies

Possible Reading Screening tools include:

- [aimswebPlus](#)
- [Benchmark Passages](#)
- [Dynamic Indicators of Basic Literacy Skills \(DIBELS\)](#)
- [Gray Oral Reading Test, Fourth Edition \(GORT-5\)](#)
- [Reading Fluency Monitor by Reading Naturally](#)
- [TOWRE-2 Test of Word Reading Efficiency](#)

All students with reading difficulties should receive a reading screening at specific points throughout the school year (i.e., beginning, middle, end) as part of a MTSS to assess benchmark scores, as well as growth and performance. Student performance should be analyzed in accordance with individual student growth goals and learning profile.

In the administration of screening tools, it is recommended that (a) grade-level expectations correspond to the screening measure, (b) screening materials are related to the current or past instruction, and (c) the scores are predictive of student performance. Procedures for administering, collecting and scoring the screening data must be valid and reliable.

PROGRESS MONITORING FOR SPECIAL EDUCATION STUDENTS

As outlined in [Literacy Guiding Principle 3](#), instruction for students with reading disabilities should be individualized and include a consistent and ongoing review of student progress to inform decisions about the effectiveness of the specific intervention. If the student is not making adequate progress toward set goals, an alternative intervention may be needed.

Students’ progress will be indicated by monitoring their fluency on reading passages and recording student data, including *words correct per minute* (WCPM) scores on a graph or chart. Information about progress monitoring tools and interventions can be found on the [National Center for Intensive Intervention](#) website.

The frequency and duration of progress monitoring will be dependent on a student’s reading level, intervention implemented and student’s level of performance. Progress monitoring data should include students’ reading strengths and challenges which will support providing appropriate interventions and individualized instruction. Students with significant reading deficits (i.e., reading one year or more below grade level), should receive individual or small group instruction by a trained and qualified professional (e.g., special education teacher, intervention specialist, literacy specialist).

Data-based Decision-making

Educators make instructional decisions based on assessment results. These data are used to develop student profiles, select interventions, and choose specific strategies to support reading growth. The analysis of assessment data helps with decision-making regarding professional development and training activities for teachers and staff. Educators have the opportunity to work collaboratively to meet student trends and can be identified in order to develop goal-oriented outcomes.

Instruction

Tiered instruction is offered with specific components practiced based on a student’s profile. Many students with reading difficulties receiving leveled instruction are in Tier III and receive intensive, individualized instruction. Students may also receive appropriate accommodations within the general education classroom which allow them to access the general education curriculum with their peers without reading difficulties. Referencing the dually differentiated curriculum (Table 1-above) and the [Universal Design for Learning](#) principles will (a) support student engagement and motivation, (b) allow students the ability to receive instruction based on their individual style of learning, and (c) offer students with several ways to demonstrate their understanding of the content.

Evidence- and Research-Based Practices

Students with reading difficulties should be provided with evidence- and research-based instruction and strategies to support their reading acquisition. Students matriculating from K-12 grade levels may find that these practices are more effective depending upon the grade band (elementary, middle, or secondary) or age.

The practices and strategies in the table below can be effective based upon the learning characteristics or profile of the student (Connor, Alberto, Compton, and O’Connor, 2014):

EVIDENCE- AND RESEARCH-BASED INTERVENTIONS	DESCRIPTION OF INTERVENTIONS	LEARNING CHARACTERISTICS	DESCRIPTION OF IMPROVEMENT
Prevention through Intensity of Instruction	Intensive interventions early	Low reading skill levels	Increasing intensity is an effective practice for students with disabilities or at risk of being identified with a disability; may prevent reading difficulties

For more examples of evidence- and research-based practices in Reading Acquisition, see [Appendix G](#).

Accommodations and Modifications

Accommodations permit students to access the curriculum and demonstrate their understanding without reducing the information or expectations of student performance. Students may receive specific accommodations during instruction and on assessments according to the information contained in their individualized education program (IEP) or 504 Plan.

Accommodations increase the accessibility of standard measures of reading (Improving Reading Outcomes, Dept. of Ed, 2014). The types of accommodations students receive is determined by their individual characteristics and behavior within a classroom environment during instruction and testing. Accommodations provided are reflected in students’:

- a) response,
- b) timing and scheduling,
- c) setting, and
- d) presentation.



Examples of accommodations that may be utilized within instructional environments may include:

- Read-aloud - supports students with vision impairments and fluency disorders
- Audio-version - supports students with vision impairments and fluency disorders
- Large print - supports students with vision impairments
- Braille - supports students with vision impairments
- Shorter segments - supports students with working memory deficits and attention issues
- Culturally relevant texts/passages - provides opportunity to support motivation and engagement

Modifications for students with reading difficulties allows for the alteration of texts and materials in a variety of formats which support accessibility of the information. Opportunities for the modification of content can be shown by using:

- Electronic books (e-books)
- Leveled curriculum
- Text selection options
- Different format/questions on assessments
- Alternative assignments/projects

OSSE has provided an [Accommodations Adaptations Matrix](#) which provides types, descriptions and examples of accommodations that students with disabilities may access in a distance, hybrid, or in-person learning environment.

## ASSISTIVE TECHNOLOGY

### Overview of Assistive Technology

The IDEA has specific requirements for educators to include not only what students will learn, but how they will access information in order to learn. An accommodation that can effectively address how students may access text is through the use of assistive technology (AT). AT includes any equipment, products and systems designed to improve or maintain the functional learning of students with disabilities (ATIA, 2021; IDEA, 2004). They serve as a support that is related to function rather than a specific disability; however, they may be made available to all students with a disability in order to remove barriers to performance (OCALI, 2013). When used appropriately, AT is an effective way to maximize students' access to general education curricula and allow students to demonstrate their learning by multiple means (Ahmad, 2015). A growing body of research indicates that the use of AT can improve outcomes of students with disabilities (Natale et al., 2020) by addressing functional barriers in an effort to increase, improve and maintain outcomes of learners (Ahmad, 2015). There are a variety of types of assistive technologies, ranging from simple to complex that may be used to support student learning (see Table 3).

**Table 3: General Types of Assistive Technology**

GENERAL ASSISTIVE TECHNOLOGY (AT)	
Type of Assistive Technology	Examples
Low-tech	Communication boards, graphic organizers
High-tech	Computers, tablets
Computer software	Screen readers, communication programs
Computer hardware	Special keyboards and pointing devices
Specialized learning materials and curriculum aids	Computer-assisted instruction

### Assistive Technology Selection and Monitoring

Students with disabilities who have difficulty with seeing, hearing, pointing, remembering and speaking (to name a few) may use AT to access instruction (ATIA, 2021). The selection of the most appropriate AT is as important as its use and how student use is monitored. The selection of AT should be based on the individual student and data collected to support its use. The IEP team, including the parent and student, should discuss the student's needs and appropriate technology to address those needs in the student's IEP. It is required by IDEA to consider AT when developing students' IEPs. Information on how including AT in IEPs can be found by visiting, Center on Technology and Disability. Careful attention should be paid to ensure AT is appropriate. It is also important to note when AT is not appropriate because it may be a barrier for students. When selecting AT, it is important for IEP team members to take into consideration whether the student needs these supports for remediation or compensation; as they are applicable for both purposes (The Iris Center, 2020). Additional information on AT can be found here: [Accommodations/Modifications](#).

Monitoring the use of AT should be conducted regularly to ensure that students are receiving the benefit it is intended to provide. Knowing and understanding students’ strengths and areas of challenge can help teachers to effectively support students (The Iris Center, 2020). It is essential for educators to collect student data on performance frequently, over a period of time (The Iris Center, 2020). Data collected should reflect student performance with and without use of AT for evaluative purposes (The Iris Center, 2020). According to The Iris Center (2020), in order for the use of AT to be effective, it must be used throughout the instructional day, every day. As such, monitoring student performance while using AT needs to occur as frequently as possible.

Use of Assistive Technology in Reading

The use of AT by students with disabilities has been effective in enhancing literacy skills. It has been used by educators to support the needs of students with disabilities for decades (Svensson et al., 2019). Reading demands students to utilize multiple skills from phonemic awareness to reading comprehension. For students with disabilities, this may be quite taxing. Reading comprehension can be severely impacted as a result of students spending a lot of time decoding and trying to make meaning of words (Forgrave, 2002). There are several ways in which educators can make accommodations for students to make text accessible to students (see Table 4). Students with learning disabilities and attention deficit hyperactivity disorder have benefited from text to speech readers to help them successfully access general education content. According to research, text to speech tools are significantly effective in improving reading comprehension of students with disabilities compared to not using this accommodation (Keelor, Creaghead, Silbert, & Horowitz-Kraus, 2020) and should be considered for students spending a lot of time with decoding. Proper training of appropriate school staff, students and parents of AT is essential for its effectiveness. Whenever possible, students should have the opportunity to practice using AT to ensure they are familiar with how to use it to increase their outcomes (The Iris Center, 2020).

Table 4: Continuum of Assistive Technology for Reading

CONTINUUM OF ASSISTIVE TECHNOLOGY FOR READING
Book adapted for access
Low-tech modifications to text
Handheld device to read individual words
Use of pictures/symbols with text
Electronic text
Modified electronic text
Text-to-speech reader
Scanner with Optical Character Recognition (OCR) and text reader
Text reader with study skill support

Assessing Students’ Needs for Assistive Technology (2009)